

AMENDMENT UNDER 37 CFR § 1.111
Serial No. 09/875,154

REMARKS

A total of 31 claims remain in the present application. The foregoing amendments are presented in response to the Office Action mailed January 12, 2005, wherefore reconsideration of this application is requested.

By way of the above-noted amendments, independent claims 1 and 16 have been amended to conform the claim language to that of the specification. Thus, sub-clause 2 of each claim has been amended to define that the interface is adapted to "aggregate a plurality of channels into a set of two or more stage-1 switch elements", as defined at paragraph 46 of the originally filed specification. This amendment is not believed to affect the scope of the claims, but merely clarifies the claim language by conforming it to that of the specification. Claims 12, 27 and 28 have been amended in order to correct errors in nomenclature, and thereby ensure proper antecedent support. Paragraph 46 of the specification has been amended to correct a grammatical error identified therein.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced.

Referring now to the text of the Office Action:

- claims 2-15 and 17-31 stand objected to for alleged informalities;
- claims 12, 13, 27, 28 and 29 stand objected to under 35 U.S.C. § 112 as failing to distinctly claim the subject matter of the present invention;
- claims 1-3, 9-11, 16-18 and 24-26 stand rejected under 35 U.S.C. § 102(e), as being unpatentable over the teaching of United States Patent Application Publication No. 2002/015968 (MacDonald);
- claims 4-7, 14, 19-22 and 30 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of MacDonalds in view of United States Patent No. 6,654,923 (Grenieret al.); and

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- claims 8, 15, 23 and 31 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As an initial matter, applicant appreciates the Examiner's indication of allowable subject matter in claims 8, 15, 23 and 31. The Examiner's claim rejections are believed to be traversed by the above-noted claim amendments, and further in view of the following discussion.

Claim Informalities

The Examiner has objected to claims 2-15 and 17-31 on the basis that the wording "A system" and "A node" is allegedly informal in a dependent claim. Applicant respectfully disagrees. The Examiner's objection is to a merely stylistic feature of claims, rather than any errors of grammar or spelling. Applicant notes that the wording of the objected claims is extremely common, and has been consistently accepted by the USPTO for many years. Applicant is unaware of a change of Office policy to the effect that such wording is no longer acceptable. Accordingly, in the absence of any such change in Office policy, Applicant has respectfully declined to amend the claims in the manner suggested by the Examiner.

Objections under 35 U.S.C. § 112

It is believed that the Examiner's objections to claims 12, 13, 27, 28 and 29 under 35 U.S.C. § 112 are fully addressed by the above-noted amendments in claims 12, 27 and 28.

Rejections under 35 U.S.C. § 102(e)

In support of his rejections under 35 U.S.C. § 102(e), the Examiner asserts (in part) that MacDonald teaches "a toggle adapted to control the set of stage-1 switch elements to selectively map traffic between a middle stage of the switch fabric and a selected one of a set of any two of the plurality of channels (it is inherent because a toggle is used to direct an input to a particular output)". Applicant respectfully disagrees.

United States Patent Application Publication No. 2002/015968 (MacDonald) teaches an optical protected cross-connect for switching a plurality of input optical signals to a plurality of locations in a non-blocking manner. The cross-connect has at least three stages, including: a

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first external stage (104, FIG. 4A); at least one center stage (108); and a second external stage 110. The first external stage (104) has a number of modules (122, FIG. 4A), each of which has a plurality of external input/output ports (122a – 122d) and at least one protection port (140). Each I/O port (122a-d) includes a redundancy switch 125 which is connected to the protection port (140) of another module 122 of the first external stage 104. In addition, the protection port 140 includes a protection switch (142) which is connected to receive optical signals from a number (2 or more in FIG. 4A) of redundancy switches 125.

As described by MacDonald, and clearly illustrated in FIG. 4, this arrangement enables "1 for 1 redundancy protection of external and central stages of the ... cross-connect" (Abstract). With this arrangement, if a module 122 or 126 of either the external 104, 110 or central stages 108 fails, signals mapped through the (failed) module can be re-routed (by operation of redundancy switches 125 and protection switches 142) through other modules of the cross-connect.

Clearly, each stage-1 module 122 is capable of routing optical signals from any of its input ports to any center stage module 126. As such, the Examiner is correct in asserting that each stage-1 module 122 is inherently capable of "toggling" any two of its inputs to a selected center stage module 126. However, this functionality does not satisfy the limitations of the present invention. In fact, this is precisely the functionality of the prior art described at paragraphs 12 and 13 of the specification.

In contrast, the present invention requires that: the interface "aggregate a plurality of channels of the communications network into [a] set of [two or more] stage-1 switch elements; and the toggle function controls "the set of stage-1 switch elements to selectively map traffic between a middle stage of the switch fabric and a selected one of a set of any two of the plurality of channels". Thus, the toggle function operates on the set of two or more stage-1 switch elements, which therefore operate cooperatively to perform the required traffic mapping function.

MacDonald does not teach or fairly suggest such a cooperative operation between switch elements. In fact, MacDonald does not teach or suggest that there is any coordination at

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all between the switch elements. According to MacDonald, protection-switching is performed by the redundancy and protection switches 125 and 142, and each affected module 122 maps optical signals received through its protection port 140 to the appropriate center stage module 126. The person of ordinary skill in the art will recognise that this mapping of traffic received through the protection interface 140 of a stage -1 module 122 will necessarily be independent of any other module, for at least the reason that each involved module 122 will be mapping its respective "protection" signal to a different center stage module 126. The only concordance between the modules 122 is that they will be performing their respective mapping operations at about the same time.

MacDonald does not teach or suggest a toggle function that maps a selected one of any two channels to a selected center stage module; as in the present invention. Furthermore, MacDonald does not teach or suggest that such a toggling function spans a set of two or more switch elements, as in the present invention. Accordingly, MacDonald fails to teach or fairly suggest all of the elements of independent claims 1 and 16, which are therefore believed to be patentable over the teaching of MacDonald.

Rejections under 35 U.S.C. § 103(a)

As noted above, MacDonald fails to teach or fairly suggest all of the elements of independent claims 1 and 16. Applicant's admitted prior art fails to provide the missing teaching. More particularly, Applicant's admitted prior art fails to teach or suggest a toggle function that maps a selected one of any two channels to a selected center stage module, and that such a toggling function spans a set of two or more switch elements, as in the present invention.


In light of the foregoing, it is respectfully submitted that the presently claimed invention is clearly distinguishable over the teaching of the cited references, taken alone or in any combination. Thus it is believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37

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C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,



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